

200 GENERAL

Normally, the first stage of roadway construction is clearing and grubbing of the roadway area. The Inspector should review the Project Plans, Standard Specifications, and Special Provisions covering this phase and make certain that the work is performed as required. Particular attention should be given to keeping the Contractor's activities confined within the limits of the slope stakes. The disposal of the resulting materials should be as directed in the contract documents. However, if disposed of off site, a letter granting permission should be in the project files.

The Resident Engineer and Inspector should be thoroughly familiar with the Project Plans and Special Provisions, soil profile, all right-of-way (ROW) agreements, and borrow pits before grading operations are started. Together, the Resident Engineer (RE) and Inspector should make a plans-in-hand inspection of the project noting the following:

- clearing limits shown on the Project Plans versus clearing actually needed;
- typical sections shown on the Project Plans;
- soil profile, cut slopes, and shrink and swell factors indicated;
- drainage profiles (check that existing drainage has not changed, proposed drainage does not flow off the right-of-way, and natural drainage isn't changed to adversely affect landowners or structures upstream and downstream);
- utilities, fences, or other obstructions to be moved or protected;
- private property boundaries and other restricted areas;
- vegetation, survey monuments, archaeological sites, or other physical features to be protected, preserved, or relocated;
- borrow sources and access roads;
- unusual soil/moisture conditions such as springs, seeps, or swamps;
- construction traffic control requirements;
- subgrade/embankment stabilization requirements; and
- ROW infringements or unresolved ROW agreements.

As noted above, the Resident Engineer should inspect the drainage of lands adjacent to the highway and make certain that all drainage structures, inlets, outlets, channel, and dikes are properly located. The Resident Engineer should determine the need for any additional drainage facilities.

Special care should be given to locations of material sources in streambeds. The impact of changes in the stream flow conditions on structures and other developments must be carefully considered. Impacts can extend a considerable distance from the point of disturbance so it is often necessary to consult with the hydraulics specialists before approving work in streambeds.

Highway construction projects have been identified as one of the primary sources of soil erosion and sedimentation. Construction of highways typically disturbs large areas of natural vegetation that can result in an accelerated rate of soil erosion. During the course of the grading and draining, frequent inspections should be performed to determine that the sequence of operations is such that damage to any of the work will be kept to a minimum in case of heavy rains (see Subsection 104.09).

For roadway excavation, the Inspector should review the soil profile while inspecting the work and should note radical variations in the actual soil conditions compared with those on the soil profile. Major differences in the soils encountered from those indicated could justify changes in the design. Should wide differences be found, it would be advisable to request a review of the conditions by the Materials Group. This is especially critical at

finish subgrade elevation. The plasticity index (PI) and amount passing the #200 (75µm) sieve of the final subgrade material are checked against the design values to determine whether adjustments to the pavement structural section are necessary. This must be done as soon as possible since any increase in pavement section could mean extra surveying and additional work by the Contractor, both may have an impact on the Contractor's schedule. (See Subsection 203-3.03(D), Unsuitable Materials.)

For embankment construction, the entire subgrade must be proof rolled with a loaded water truck or any other heavy piece of equipment. The Inspector should see that any unstable spots in the natural ground are corrected before any embankment lifts are placed.

The Inspector must be familiar with the location of approved borrow pits and the quantity and quality of materials to be removed.

The Inspector is responsible for seeing that the grade is constructed in accordance with the Project Plans to the limits indicated by the slope stakes. If there is any question concerning the placement or markings of a slope stake, the Inspector should contact the Contractor's survey party chief for clarification.

Construction of Detours

Many construction projects require detours prior to building the roadway. Usually, the need for such detours is foreseen, and detailed information about detour construction is given in the Project Plans or referred to in the Standard Drawings. An on-site inspection of all proposed detours should be made. Any recommendations that might serve to add to the safety of the traveling public should be referred to the Resident Engineer.

When changes are made to the detours shown on the Project Plans or new detours are added, the changes are to be reviewed by the Regional Traffic Engineer and documented by change order.

The Department recognizes its obligation to provide safe, easy-to-drive detours. This, along with minimal delay, is a benefit to our public relations.

Proper signing, marking, and lighting of detours are extremely important. All detours should be signed and marked as directed in Part IV of the MUTCD with the ADOT Supplement.

After the completion of detour construction including signing, striping, and lighting, the Resident Engineer should make a daytime and nighttime inspection of the detour. The traffic control coordinator for the project should do frequent re-inspections and documentation of the detour.

It is beneficial to have someone who is not involved in the design of traffic control accompany the Resident Engineer during his or her inspection of traffic control. An independent observation can be very beneficial in finding problems. Arrange to drive through the project with a local police officer, county deputy, or Department of Public Safety officer. Deficient detour conditions must be remedied as soon as possible. There may be instances when the Contractor's work will need to be suspended until detour safety is satisfactory.

A complete record including diagrams, plans, photographs and/or video recordings must be kept showing all traffic control devices and the detour including any changes to either. Plans and diagrams should show the type, location, and sizes of all signs, barricades, and any other traffic control device. The photographs and video recordings should be taken to provide a sequence of pictures showing the detour from beginning to end.